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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Amendment of Part 25 of the Commission's Rules to Establish Rules and Policies Pertaining to the Second Processing Round of the Non-Voice, Non-Geostationary Mobile Satellite Service	)	IB Docket No. 96-220

REPLY COMMENTS OF MOTOROLA, INC.

I. INTRODUCTION

Motorola Inc. hereby replies to comments filed in the above captioned proceeding in order to express support for the commenters that have asked the Commission to refrain from considering any additional allocation of spectrum for the NVNG MSS in frequency bands currently allocated to the private land mobile radio services ("PLMRS").[1] Motorola is particularly concerned about proposals to allocate, presumably on a secondary basis, the 150-156 MHz or 450-470 MHz bands for NVNG MSS.[2]

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[1] See, e.g., Comments of the Industrial Telecommunications Association, Inc. (Dec. 20, 1996); Comments of the American Petroleum Institute (Dec. 20, 1996); Comments of the Association of American Railroads (Dec. 20, 1996).

[2] See, e.g., Comments of Final Analysis Communication Services, Inc., at 29-32 (Dec. 20, 1996) (arguing that additional spectrum should be allocated to Little LEO licensees); Comments of Orbital Communications Corp., at 33 (Dec. 20, 1996) ("ORBCOMM") (same).

Motorola's interest in this proceeding stems from its status as a leading manufacturer of wireless products and systems in the U.S. and global marketplace.[3] Motorola offers 35 families of products and hundreds of different radio models for the private wireless market, many of them using the heavily congested 150 MHz and 450 MHz bands. As discussed below, these bands are facing potentially harmful overcrowding due to the continued growth of the PLMRS and there is no public interest basis for increasing the current level of congestion by allowing shared access to NVNG MSS. Because the NVNG MSS proponents have failed to adequately show that a sharing arrangement can be adopted that will not cause degradation to PLMR transmissions, the Commission should decline to consider allocating any PLMRS spectrum to NVNG MSS.

II. IT WOULD BE INAPPROPRIATE TO CONSIDER IMPOSING A SHARING ARRANGEMENT BETWEEN NVNG MSS AND THE PLMRS IN THE ALREADY OVERCROWDED 150 MHz AND 450 MHz BANDS

As the Commission has acknowledged in other proceedings, the 150-156 MHz and 450-470 MHz bands are some of the most overcrowded and heavily used segments in the radio spectrum.[4] The bands below 512 MHz that are designated for the PLMRS support more than

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[3] Motorola's major equipment lines include cellular telephone, two-way radio, paging and data communications, personal communications, automotive, defense and space electronics and computers. Additionally, communications devices, computers and millions of consumer products are powered by Motorola semiconductors. Motorola's 1996 sales were $28 billion.

[4] See Examination of Exclusivity and Frequency Assignment Policies of the Private Land Mobile Radio Services, PR Docket No. 92-235 (June 23, 1995). In fact, in a 1983 report, the Private Radio Bureau concluded that "[w]ithout additional spectrum land mobile users, constrained by a lack of options, may seek less desirable forms of communications in terms of cost, operational capability, effectiveness and level of congestion." Future Private Land Mobile Telecommunications Requirements, Private Radio Bureau, FCC, at 8 (Aug. 1983).

16 million licensed transmitters,[5] with an aggregate value of $25 billion.[6] Additionally, the demand for PLMRS spectrum is continuing to experience dramatic growth.[7]

These bands are not only heavily used, they serve important public interest needs. Public safety agencies make intense use of this spectrum for, *inter alia,* the Local Government Radio Service,[8] the Police Radio Service,[9] the Fire Radio Service,[10] the Emergency Medical Radio Service,[11] other medical and rescue organizations,[12] disaster relief organizations,[13] and

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5 See Contribution by the Association of American Railroads Regarding Certain Proposed Modifications to the Draft Consolidated CPM Report to the WRC-95, at 2 (Feb. 24, 1995).

6 See id. at ¶ 2 (citing Letter from User Associations to William F. Caton, Federal Communications Commission, at 5 (Jan. 13, 1995)).

7 Id. at ¶ 8.

8 See 47 C.F.R. § 90.17(b) (1995).

9 See 47 C.F.R. § 90.19(d), (f) (1995).

10 See 47 C.F.R. § 90.21(b) (1995).

11 See 47 C.F.R. § 90.27(b) (1995).

12 See 47 C.F.R. §§ 90.35, 90.37 (1995).

13 See 47 C.F.R. § 90.41 (1995).

lifeguards.[14] These radio services literally help to save lives; sharing with MSS could imperil these services and, perhaps, undermine the ability of professionals to safeguard the public.[15]

As recognized by the Commission, additional sharing of these channels could impair the communications capabilities of the entire PLMRS. The Commission observed in its *Refarming Proceeding* that "[w]e are convinced that, without significant regulatory changes in the bands below 512 MHz, the quality of PLMRS communications will likely deteriorate to the point of endangering public safety and the national economy."[16] The solution adopted in the *Refarming Proceeding*, however, was not the addition of more spectrum. Instead, the Commission imposed more "narrowband" transmission obligations,[17] which further increased the density of the bands below 512 MHz and makes sharing that much more impractical.[18]

In light of the critical nature of PLMRS operations, the Commission must be diligent in its review of proposals to share this spectrum. While Motorola routinely supports Commission efforts to accommodate the spectrum needs of new technologies and certainly

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[14] See 47 C.F.R. § 90.45 (1995).

[15] Moreover, the bands are also used by countless other entities to support day-to-day operations of their businesses: power utilities, see 47 C.F.R. § 90.63 (1995); petroleum companies, see 47 C.F.R. § 90.65 (1995); train control, see 47 C.F.R. § 90.91 (1995); taxicabs, see 47 C.F.R. § 90.93 (1995); tow trucks, see 47 C.F.R. § 90.95 (1995); as well as general business users, see 47 C.F.R. § 90.75 (1995).

[16] Replacement of Part 90 by Part 88, 7 FCC Rcd 8105 (1992).

[17] See Report and Plan of the Federal Communications Commission: Meeting State and local Government Public Safety Agency Spectrum Needs Through the Year 2010 (Feb. 9, 1995).

[18] It should be noted that, while the Commission has imposed data efficiencies of at least 0.768 b/s/hz on PLMR users, the proponents of NVNG MSS have failed to assure the Commission that their systems will achieve comparable efficiencies.

supports marketplace competition, the NVNG MSS operators have not adequately demonstrated any spectrum need to justify potential disruptions to PLMRS operations, particularly considering the number of existing communications services that already address the markets envisioned by NVNG MSS.[19]

In this regard, the Commission was correct in requesting in the NPRM that NVNG MSS proponents supply information on the expected demand for their service.[20] Thus far, the studies tendered by Little LEO proponents, both in the context of preparing for WRC-97 (IWG-2A) and in this proceeding, are not compelling. For example a study by NVNG MSS proponents indicated that by the year 2002 NVNG MSS will provide "meter reading" services for more than 14 million utility customers,[21] even though industry experts predict that by 1999 utility companies will install only 17 million new utility meters in the U.S.[22] In contrast, a survey conducted by the Utility Telecommunications Council ("UTC") of 23 utility companies

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[19] The level of competition from other services is recognized by the NVNG MSS proponents. See ORBCOMM Comments at 24-27; Comments of GE-Starsys at 10-12 (Dec. 20, 1996); Comments of E-SAT at 20 (Dec. 20, 1996).

[20] See NPRM at ¶ 25.

[21] See Demand and Demand Growth for NVNG Services, Draft Contribution to Section 2.1 of the IWG-2A Report, WAC-IWG-2A/25 (Rev. 5), at 4 (Sept. 17, 1996) ("NVNG MSS Demand Study").

[22] See Current Electric Utility Installations and Commitments, The Chartwell AMR Report, at 27 (1996).

in the U.S. identified only two companies that expressed any interest in utilizing NVNG MSS for meter reading services.[23]

Proponents of Little LEO services fail to adequately consider competition from other technologies in their studies and the effect that such competition will have on their spectrum needs.[24] As the Commission considers the future spectrum needs of the NVNG MSS, it must factor the ability of other services to provide two-way mobile data services in the United States.[25] In this way, the FCC will ensure that the spectrum demands of the NVNG MSS

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[23] See UTC Response to August 19 Report: "Demand and Demand Growth For NVNG Services," WRC-IWG-2A, Doc. No. 60, at 3 (Sept. 4, 1996) ("UTC Study"). Motorola is perplexed by the great interest of the NVNG MSS proponents in providing "meter reading" services. See e.g., NVNG MSS Demand Study at 7 (indicating that 14,874,000 of the 18,763,000 customers it projects will be for meter reading services); see also E-SAT Comments at 20 (indicating its intent to construct a Little LEO system designed "primarily" to provide remote utility meter reading). Motorola questions why *mobile* satellite systems are being developed to primarily address *fixed* services particularly since a number of terrestrial services are already capable of meeting this need. In fact, existing wire-based communications carriers, PCS operators, and PLMRS links are probably better able to "bundle" metering services with other offerings such as telephone, Internet access, and cable television. Such a portfolio of "value added services" will likely prove more attractive to utility companies.

[24] See NVNG MSS Demand Study at 7-8 (indicating, for example, that the competitive technologies for metering reading services are limited to "hand-held radio, mobile radio, fixed cellular networks" thus ignoring such competitors as telephone companies, cable operators, PCS, trunked radio, LMDS, and the utilities themselves (using existing power lines)).

[25] NVNG MSS applicants and licensees recognize in their comments the number of services providing similar services in the marketplace. See, e.g., ORBCOMM Comments at 24-27 (arguing that the potential customers for Little LEO operators can turn to "numerous wireless alternatives for remote meter reading and asset tracking and monitoring" and alternatives also exist for messaging and data transfer, "including one-way paging, two-way paging, narrowband PCS, broadband PCS, SMR and cellular service"); GE-Starsys Comments at 10-12 (noting that "there are at least as many different types of firms that can provide services that are the same or similar to those provided by Little LEO operators as there were in the two-way mobile voice telephony CMRS marketplace in 1995"); E-SAT Comments at 20 (noting that "[t]he marketing difficulties experienced by current MSS licensees attest to the

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industry are based on actual need before proposing a sharing option with existing critical services. However, in Motorola's view, a sharing regime between NVNG MSS and PLMR in the already overcrowded 150 MHz and 450 MHz spectrum would further increase congestion and could cause significant degradation to the quality and reach of PLMR transmissions.[26] Therefore, the Commission should decline to adopt such a disruptive sharing regime, especially at a time when PLMRS users are being transitioned to narrower bandwidths in order to relieve the congestion that already exists.

IV. CONCLUSION

Motorola has historically been a strong supporter of the development of new technologies and communications services. In this regard, Motorola believes that the FCC should make every effort to accommodate new services through well-reasoned and efficient reallocations of spectrum. It would be inappropriate, however, to consider designating

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(Continued . . .)
fact that the ability to provide a service does not automatically translate to a willingness on the part of customers to pay for that service").

[26] See Arguments in Opposition to NVNG Sharing with Terrestrial Mobile Services, included in Preliminary Report, Informal Working Group 2A NGSO MSS Below 1 GHz, at 86 (Nov. 1996) Indeed, the position of the Little LEOs on the feasibility of sharing appears to be based on the misconception that use of this band is "intermittent." While this may be true for individual users, when viewed over a larger area, any given channel is in nearly constant use. Because of the numerous overlapping terrestrial service areas and the size of the satellite downlink "footprint," even short "bursty" communications would likely interfere with co-frequency terrestrial transmissions within line of sight.

the heavily used 150 MHz or 450 MHz bands for Little LEO sharing. As Motorola has amply demonstrated in previous pleadings before the Commission, steps should be taken to lessen the strain on the bands below 512 MHz, rather than increase its burden through a sharing arrangement that will likely result in interference to the spectrum's existing users.

Respectfully submitted,

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